

CLAIMS

1. An image display device comprising imaging optics having an exit pupil, said imaging optics generating a projection of an image perceivable by an observer, and comprising pupil optics, said pupil optics spatially multiplying the exit pupil of the imaging optics, moving the exit pupil or a combination of the foregoing.

2. The image display device as claimed in Claim 1, wherein the pupil optics are arranged following the last beam-forming surface of the imaging optics.

3. The image display device as claimed in Claim 1, wherein the pupil optics move the exit pupil in a plane extending transversely to the optical axis of the imaging optics.

4. The image display device as claimed in Claim 1, wherein the exit pupil is moved such that it tracks a movement of a pupil of an eye of the observer.

5. The image display device as claimed in Claim 1, comprising an eye-position sensing unit and a control unit, said eye-position sensing unit sensing the position of an eye of the observer and emitting signals which represent the sensed position, and said control unit controlling the pupil optics as a function of said signals in order to make the exit pupil track the movement of the eye pupil of the observer.

6. The image display device as claimed in Claim 1, wherein the pupil optics comprise at least one actuator unit.

7. The image display device as claimed in Claim 6, wherein the actuator unit comprises a galvanometer mirror.

8. The image display device as claimed in Claim 1, wherein the pupil optics for spatial multiplication of the exit pupil contain at least one diffractive element.

9. The image display device as claimed in Claim 8, wherein the diffractive element comprises a transmissive element.

10. The image display device as claimed in Claim 1, wherein the pupil optics for spatial multiplication of the exit pupil comprise at least one birefringent element.

11. The image display device as claimed in Claim 8, wherein the element for moving the exit pupil is moved.

12. The image display device as claimed in Claim 8, wherein the element for moving the exit pupil is rotated about the optical axis of the imaging optics.

13. The image display device as claimed in Claim 10, wherein the element for moving the exit pupil is moved.

14. The image display device as claimed in Claim 10, wherein the element for moving the exit pupil is rotated about the optical axis of the imaging optics.

15. The image display device as claimed in Claim 1, wherein the pupil optics for moving the exit pupil comprise a rotating, beam-offsetting element.

16. The image display device as claimed in Claim 1, wherein the pupil optics cause a spatial multiplication of the exit pupil such that the corresponding rays from the individual exit pupils are parallel to one another.

17. The image display device as claimed in Claim 1, wherein the pupil optics cause a spatial multiplication of the exit pupil such that the individual exit pupils cover a continuous area.

18. The image display device as claimed in Claim 1, further comprising a head mounted display device and a controllable image-generating module.